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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,255	07/14/2003	Robert A. Marshall		7046

7590 01/10/2005  
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EXAMINER

BLOUNT, ERIC

ART UNIT PAPER NUMBER

2636

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/619,255	MARSHALL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Eric M. Blount	2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-21, 29, 30, 33, 34 and 38-40 is/are rejected.
- 7) ☒ Claim(s) 8, 22-28, 31, 32 and 35-37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. <u>07142003</u>                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07142003</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Claim 1 presents a spindled cable, a signal source connected to a cable, and a signal detector connected to a cable. The claim can be interpreted as presenting up to three separate cables. The specification does not support these limitations.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, embodiments of the invention including from 1 to 3 cables as presented in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodge [U.S. Patent No. 6647161].

As for **claim 1**, Hodge discloses a spindled cable, which is defined in the invention as a drone cable (column 7, line 60 – column 8, line 16). Multiple spindles can be anchored to a structure to ensure that displacement of the cable can be detected upon failure of the structure (column 7, lines 63-67, column 8, lines 17-27 and 44-50). Hodge discloses tensioner/sensor assemblies through which a spindled cable is run. The tensioner/sensor assemblies contain pulleys. These assemblies are analogous to the multiple spindles in the present application. Hodge discloses a signal source connected to a cable and a signal detector also coupled to a cable (column 4, lines 12-40). A pulsed signal acts as a signal source and a photo detector acts as a signal

detector. Hodge does not specifically disclose that the multiple spindles provided are for ensuring a cable break upon failure of the structure. However, Hodge discloses that movement of the cable is tracked to indicate failure of a structure. It is obvious that the multiple spindles disclosed by Hodge are capable of providing efficient results regardless of whether the cable is broken. It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant that a cable break would constitute movement of the cable and thus indicate failure of a structure.

As for **claim 2**, Hodge discloses the use of fiber optic cables (column 4).

As for **claim 3**, it would have been obvious to one of ordinary skill in the art at the time of the invention by applicant that cables used in this type of system could be pre-stretched. It would have been obvious that one might want to pre-stretch cables so that slight failures in a structure could be detected by eliminating sagging errors.

As for **claim 4**, Hodge shows a spindle set in Figure 19. This reasonably appears to meet the definition of a spindle set as defined by the applicant.

As for **claims 5-7**, these are all modifications that would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant. It is obvious that one would want an optimal cable and spindle system to produce the best results.

As for **claims 10 and 11**, Hodge reasonably appears to meet all of the limitations set forth by the claims. Multiple tensioner/sensor assemblies are placed along the span of a structure and each assembly includes the same equipment. This reasonably appears to meet the limitations of multiple and redundant detection systems.

5. Claims 9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodge as applied to the claims above, and further in view of "State of Texas".

As for **claim 9**, Hodge does not disclose that a signal detector is coupled to a traffic signal, gate, or horn. In an analogous art, The State of Texas Highway Project discloses that a signal detector can be coupled to flashing beacons or a railroad type gate (page 2).

As for **claims 12-15**, The State of Texas Highway Project discloses that a data signal and a controller may be coupled to a signal source and the signal detector may respond to diagnostic commands (page 2, paragraphs 3-4). An independent backup power source is provided for the signal source and detector (page 2, paragraph 4). The system is coupled with offsite maintenance and emergency personnel and may provide information automatically or by request via a data connection (page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to combine the teachings of the two inventors because a combination would result in a structure failure monitoring system that was more efficient in notifying the proper people of an immediate danger associated with a failing structure.

6. Claims 16-18 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over "State of Texas".

As for **claim 16**, the State of Texas discloses a system for detecting structure failure that comprises a fiber optic cable coupled to a structure and alarm indicator controllers located on the structure wherein the controllers monitors for a break in the

fiber optic cable. At least one controller is coupled to at least one user indicator (page 2). The State of Texas shows a PLC and Remote Rock that function as controllers for monitoring cable breaks and initiating user indicators. The reference does not specifically disclose that one of the controllers is located mid span of a structure. It is obvious however that the controllers operate user indicators that span the entire structure. The placement of a controller mid span of a structure can be viewed a matter of design choice.

Regarding **claims 17 and 18**, it was stated above that the State of Texas discloses that each controller comprises an independent backup power source and may respond to diagnostic commands.

As for **claims 29 and 30**, the teachings of the reference as applied to the claims above reasonably appear to meet the limitations of the claims. Please refer to page 2 of the reference.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over "State of Texas" as applied to the claims above, and further in view of Hodge.

Regarding **claim 19**, State of Texas does not disclose the use of an inclinometer. In an analogous art, Hodge discloses the use of a tilt meter (column 10, lines 41-44). It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include the inclinometer as taught by Hodge in the invention taught by the State of Texas because it would have provided additional means for detecting displacement of a structure making the system even more effective.

8. Claims 20-21, 33-34, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over "State of Texas" in view of Schmidt et al [U.S. Patent No. 5479150].

As for **claims 20 and 33**, the State of Texas discloses a fiber optic cable attached to a structure such that cable failure indicates structure failure. The reference does not disclose a means for anchoring the cable to the structure.

In an analogous art, Schmidt discloses a means for attaching a cable to a structure so that the cable will not slip or creep past an attachment point (column 3, lines 35-44). Both references are capable of monitoring a cable break.

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to combine the teachings from the two references because a combination would result in a system that was more efficient because it would not be affected by sagging cables or false alarms.

As for **claims 21 and 34**, it is obvious that anchoring means can be adjusted to an optimal position for supporting the cable.

Regarding **claim 38**, both references show that user indicators are operable by the absence of an expected signal (see citations from above rejections).

As for **claim 39**, it was disclosed above that the State of Texas may provide a data signal to operate diagnostic features.

As for **claim 40**, it was noted above that the State of Texas discloses a backup power source that provides power to the system for at least 30 minutes. It is obvious that one would provide the most efficient power input.

***Allowable Subject Matter***

9. **Claims 8, 22-28, 31-32, and 35-37** are objected to as being dependent upon a rejected base claim, but it appears that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

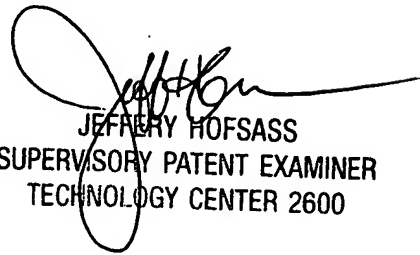
***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Blount whose telephone number is (571) 272-2973. The examiner can normally be reached on 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric M. Blount

  
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